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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/500,824

07/02/2004

Kee-Pyung Nahm

428.1043

8490

20311

7590

10/02/2006

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EXAMINER

CLARDY, S

ART UNIT

PAPER NUMBER

1617

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/500,824

Applicant(s)

NAHM ET AL.

Examiner

S. Mark Clardy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/7/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

Claims 1-10 are pending in this application which has been filed under 35 USC 371 as a national stage application of PCT/KR03/02246, filed October 23, 2003. This application possesses unity of invention under 37 CFR 1.475 (MPEP 1850, 1893.03(d)).

Applicants' claims are drawn to:

1. A composition (for gametophytic self-incompatibility) comprising Cu or Zn ions which may be chelated/complexed
2. A method for inhibiting self-incompatibility comprising applying the composition to plants (claims 8-10).

Claims 2, 5, and 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, it appears that “bidentate” was intended, rather than “bibentate”; in claim 5, line 2, the word “sulfur” is misspelled.

In claims 8-10, the method refers to a step of applying the compositions, but the target is unspecified and cannot be clearly determined from the context (plant? seed? leaves? roots?).

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(a) and (b) as being anticipated by Chung et al (WO 01/65921).

Chung et al disclose the utility of copper and zinc sulfate for regulating gametophytic self-incompatibility in plants. The claims as drafted herein read on non-complexed and non-chelated copper and zinc salts including sulfates when n=0.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Chung et al, Bauer et al (US 4,576,626) and Ross et al (US 6,444,470).

Chung et al has been discussed above, and discloses the plant self-incompatibility regulation properties of copper sulfate and zinc sulfate.

Bauer et al teach that micronutrients are known fertilizer materials, i.e., inorganic compounds of copper, magnesium, zinc, and manganese, among other metal salts. The disclosed foliage fertilizers comprise compounds such as copper sulfate, zinc sulfate, manganese sulfate, and magnesium sulfate (col 3, example 1). Chelating agents are disclosed as conventional components (col 3, lines 7-14). It is not seen how applicants' compositions differ from known micronutrient fertilizer compositions. Further, it would appear that application of the micronutrient fertilizers of Bauer et al would necessarily be the same as the method step used herein.

Ross et al teach that compositions comprising these micronutrient materials (Tables 11-17) are useful for genetically transforming corn plants (abstract).

One of ordinary skill in the art would be motivated to combine these references because they disclose the utility of metal salts for treating plants.

Thus it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have made compositions comprising applicants' metal salts and

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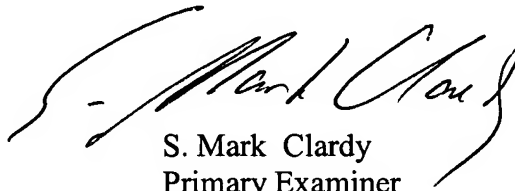
applied them to plants because the prior art teaches that these were known micronutrient materials for plants. Ross et al further discloses their utility in compositions for genetic transformation of plants, and Chung et al teaches that the same materials are useful for regulation of self-incompatibility.

No unobvious or unexpected results are noted; no claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Mark Clardy whose telephone number is 571-272-0611. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreenivasan Padmanabhan can be reached on 571-272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "S. Mark Clardy", is written over a horizontal line.

S. Mark Clardy  
Primary Examiner  
Art Unit 1617

September 27, 2006